

# FLIGHT

*The*  
**AIRCRAFT  
ENGINEER  
&  
AIRSHIPS**

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

No. 808. (No. 25, Vol. XVI.)

JUNE 19, 1924

Weekly, Price 6d.  
Post free, 7d.

## Flight

*The Aircraft Engineer and Airships*

Editorial Offices: 36, GREAT QUEEN STREET, KINGSWAY, W.C. 2

Telegrams: Truditur, Westcent, London. Telephone: Gerrard 1828

Annual Subscription Rates, Post Free:

United Kingdom .. 30s. 4d. Abroad .. 33s. 0d.\*

These rates are subject to any alteration found necessary under abnormal conditions and to increases in postage rates

\* European subscriptions must be remitted in British currency

## CONTENTS

	PAGE
Editorial Comment	
The R.A.F. in Kurdistan .. .. .	391
Honours .. .. .	392
Operations in Kurdistan .. .. .	393
R.A.F. Pageant .. .. .	394
The Aero Show at Prague .. .. .	395
Royal Air Force .. .. .	401
R.A.F. Intelligence .. .. .	401
R.A.F. Sports .. .. .	401
Progress in the Big Flights .. .. .	402
Imports and Exports .. .. .	402

## DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:—

1924

- June 21 .... F.A.I. Conference Opens, Paris
- .. 21 .... Independent Force (R.A.F.) 6th Annual Reunion Dinner at R.A.F. Club
- .. 25 .... R.N.A.S. and 5th Group, R.A.F., annual dinner
- .. 28 .... Royal Air Force Pageant, Hendon
- July 24–Aug. 10 Tour de France for Light 'Planes
- July 26 .... King's Cup Race
- Aug. 4 .... Aerial Derby at Lympne
- .. 4 .... Holiday Light Aeroplane Handicap at Lympne
- Sept. 8–13 Light 'Plane Competitions at Lympne
- Oct. 2 .... Aero Golfing Society. Autumn Meeting, at Moor Park Golf Club, for A.G.S. Challenge Cup presented by Cellon (Richmond) Ltd.
- October .... Schneider Cup Race, Baltimore, U.S.A.

## EDITORIAL COMMENT.



### The R.A.F. in Kurdistan

ONE of the most fascinating official documents to be published in recent years is the supplement to the *London Gazette* of June 10, 1924, containing the despatches of Air Vice-Marshal Sir John M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O., Air Officer Commanding British Forces in Iraq. These despatches describe the operations carried out in Kurdistan against the pro-Turk intrigues of Shaikh Mahmoud, Governor of Sulaimaniyah. Extensive extracts from Sir John's despatches are published on pp. 393-394 of this issue of *FLIGHT*, and these should be carefully read by all interested in this latest use of the air arm, a use which, on the authority of Sir John Salmond himself, may well be vastly extended in the future as more experience is gained.

It is difficult, in fact well-nigh impossible, for us at home fully to appreciate the difficulties with which the British forces in Iraq had to contend. An examination of even a large-scale map merely reveals the fact that the operations were carried out in very difficult hill country, and it is easy to see that Sir John spoke no more than the bare truth when he stated that "even the most recent maps are of small value for military operations." In order to fix ideas somewhat, and thus be able the more clearly to follow Sir John's despatches, it may be stated that Kirkuk is the railhead some 150 miles due north of Baghdad, and approximately 100 miles south-east of Mosul. Sulaimanieh, the headquarters of Shaikh Mahmoud, is situated some 60 miles east north-east of Kirkuk, near the Persian border, and in a range of hills difficult of access. Serdash, or Sardasht as it is usually spelled on maps, to the neighbourhood of which Shaikh Mahmoud fled when his section of Sulaimanieh was bombed, is just inside the Persian border, some 30 or 40 miles to the north of Sulaimanieh.

The whole of Sir John Salmond's despatches should be carefully read, and a perusal of such extracts as we have been able to publish should serve to indicate how vastly interesting are the full despatches them-

selves. It is not possible here to refer to more than a very few points that emerge, and we therefore confine ourselves to calling particular attention to uses to which aircraft were put, and in which they did excellent service. It may be stated at once that those sceptics who, when it was first proposed to hand over the control of Iraq to the R.A.F., expressed doubt as to the feasibility of using the air service for such purpose, will find their reply in Sir John Salmond's despatches, and one particular passage is so very illuminating that it cannot be over-emphasised. This passage runs as follows: "Indeed, had it not been for this power of rapid intercommunication which I possessed in aircraft and R.A.F. wireless in this country of great distances and crude means of communication, I should have hesitated to undertake this operation at all." In this connection, it is of interest to find that Sir John promises a separate report on the normal work of air co-operation by reconnaissance, photography and sketching which was carried out daily.

Sir John points out that in no previous "small war" has the commander been so closely in touch with his columns, and at the same time with the general situation throughout the country. He points out that on March 12 he was able to examine personally the situation on all sectors, travelling altogether something like 550 miles by air. It is obvious that in no other way could this have been accomplished, and such advantage can scarcely be overestimated. Although many days' rain had rendered the ground boggy, Sir John was able to land by aeroplane at Rowanduz two days after the column had entered it. While the two columns were on the march, Sir John states, and all other means of communication with them were impracticable, messages dropped and picked up by aircraft kept the column commanders in close personal

touch with one another and with Sir John Salmond. This method of communication was found in practice to be superior in rapidity even to the wireless telegraph.

The despatches amply show that the use of aircraft was not by any means confined to the rapid transport of messages. The earlier part of the despatch indicates that aircraft were employed with excellent effect for bombing Sulaimanieh. On another occasion, while the column was marching through difficult country, mobility was greatly increased by using aircraft for scouting along the route, thus avoiding the necessity for picketing the surrounding heights.

Yet another, and very important, use of aircraft was the carrying of supplies. Sir John states that in one day more than four tons of barley, a day's ration for the column, were dropped by Vickers "Vernons," while boots and socks, the wear and tear on which was prodigious, were supplied to the columns by air.

A striking example of the value of aircraft for ambulance duties is provided in the despatches by the statement that some 200 dysentery cases were evacuated by "Vernons" to Baghdad, a distance of something like 200 miles. These cases, the despatch points out, must otherwise have been transported by donkeys, and the journey would have occupied about six days, while the suffering would have been intense.

Beyond our extracts elsewhere, space does not allow of more than this most sketchy reference to a few of the uses to which aircraft were put with great success, and we would again urge all interested in this fascinating subject to obtain the Supplement to the *London Gazette* containing the full despatches of Sir John Salmond. The Supplement was published on June 11, and can be obtained from H.M. Stationery Office, Kingsway, London, W.C.2. The price is sixpence net.

## HONOURS

### KURDISTAN OPERATIONS

#### Rewards for Service in the Field

THE following rewards for services in the field in connection with operations in Kurdistan, 1923, are announced in a supplement to the *London Gazette* issued on June 11. They are to be dated June 3, 1924:—

##### Meritorious Service Medal

S/6449014 Pte. A. H. G. Denny, R.A.S.C. (now No. 338127 R.A.F.) (Devonport).

The King has approved of the following rewards for distinguished service rendered during the operations in Kurdistan between February 15 and June 19, 1923:—

##### Distinguished Service Order.

Sqdn.-Ldr. E. R. Manning, M.C.

##### Distinguished Flying Cross

Flight-Lieut. E. G. Hilton, A.F.C.; Flight-Lieut. T. A. Langford-Sainsbury, A.F.C.; Flying Officer H. S. Broughall, M.C.; Flying Officer D. F. Anderson; Flying Officer A. T. K. Shipwright; Flying Officer H. R. McL. Reid.

##### Distinguished Flying Medal

313701 Cpl. (A/Sgt.) C. J. Dix; 81637 Cpl. S. E. Wells; 326984 L.A.C. P. M. French; 240769 L.A.C. F. Holmes; 157539 L.A.C. F. P. J. McGevor; 326719 A.C.1 C. E. Edwards.

##### Meritorious Service Medal

23 S.M.1 J. Wilkinson; 755 F/Sgt. W. G. Bates; 201227 F/Sgt. R. L. Bell; 1905 F/Sgt. W. D. Fotheringham; 206123 F/Sgt. S. W. Thomas; 313303 F/Sgt. J. R. Woollard; 14035 Sgt. F. H. Catton; 6475 Sgt. S. Hamblin.

#### Mentioned in Despatches

The names of the following have been brought to notice for distinguished service rendered during the operations in Kurdistan, February 15 to June 19, 1923, by Air Marshal Sir John Maitland Salmond, K.C.B., C.M.G., C.V.O., D.S.O., Commanding British Forces in Iraq, in the despatch (see page 393) dated June 21, 1923:—

*Commands and Staff.*—Wing-Comdr. C. R. S. Bradley, O.B.E., R.A.F.; T/Capt. (T/Lieut.-Col.) E. Dwyer, C.B.E., M.C., Gen. List (Q.M. and Capt. in Army); Capt. W. A. Lovat-Fraser, 4/8th Punjab R., I.A.; Sqdn.-Ldr. R. H. Peck, O.B.E., R.A.F.; Sqdn.-Ldr. R. W. Thomas, O.B.E., R.A.F.; Col. (T/Col.-Comdt.) B. Vincent, C.B., C.M.G.

##### Royal Air Force

Flight-Lieut. W. F. Anderson, D.S.O., D.F.C.; Flying Offr. M. H. Aten, D.F.C.; Flying Offr. C. C. Bazell; Flight-Lieut. Hon. R. A. Cochrane, A.F.C.; Sqdn.-Ldr. A. Coningham, D.S.O., M.C., D.F.C.; Flight-Lieut. A. Ferris; Flight-Lieut. G. E. Gibbs, M.C.; Flying Offr. F. J. Knowler; Flying Offr. F. W. Long; Flight-Lieut. A. F. Somerset-Leeke; Flight-Lieut. L. H. Vernon; Flying Offr. J. C. Walker; Sqdn.-Ldr. R. P. Willock; Flight-Lieut. H. E. F. Wyncoll, O.B.E., M.C.; 327220 L.A.C. C. A. Baxter; 340613 L.A.C. R. J. Baxter; 343771 Cpl. J. W. Biller; 326044 A.C.2 A. J. Blomfield; 1917 F/Sgt. A. J. Locke; 341399 L.A.C. E. A. Machin; 314933 Sgt. W. J. Mullard; 331936 Cpl. C. F. Piggott; 149381 L.A.C. (A/Cpl.) B. Reeve; 1573 F/Sgt. A. E. Smith; 347281 Cpl. W. T. Stacey.

## BRITISH OPERATIONS IN KURDISTAN

In a supplement to the *London Gazette* (June 10) are published the despatches of Air-Vice-Marshal Sir J. M. Salmond, Commanding British Forces in Iraq, covering a period from February 15, 1923, to June 19, 1923. These despatches describe some successful operations carried out in Kurdistan against the pro-Turk intrigues of Shaikh Mahmoud, Governor of Sulaimaniyah. We can only, in the space at our disposal, outline briefly the details of these operations, but in view of the important part played by aircraft—special mention of which was made by Sir John—we will deal fully with the air side of this "small war."

During February, 1923, it was ascertained that Shaikh Mahmoud had formed a plan to attack Kirkuk, that he was in communication with the Shia Divines of the Holy City of Najaf, with the object of raising simultaneously a general insurrection in Iraq, and that he had entered into an arrangement with Ramzi Bey, propagandist officer for Euz Demir, the Turkish Irregular Commander in Kurdistan, for the recapture of Koi Sanjak. These, and other activities were considered sufficiently mischievous and dangerous to warrant prompt action. Shaikh Mahmoud was accordingly summoned to Baghdad, and at the same time two companies of 14th Sikhs were transported by air from Kingerban to Kirkuk, weather conditions having at that time rendered the marching route impracticable.

An evasive reply having been received from Shaikh Mahmoud, proclamations were dropped by air warning both Shaikh Mahmoud and the people of Sulaimaniyah that the town would be bombed if he did not comply before sundown on March 1. Delay action bombs were dropped outside the limit of the town in emphasis of our intention to enforce compliance. As the immediate result of this operation Shaikh Mahmoud resigned, 42 notables petitioned for mercy, and a delegation was sent to Kirkuk.

Shaikh Mahmoud, however, did not leave his headquarters in the town within the time limit, so this particular quarter of the town was bombed, whereupon he fled at once to the neighbourhood of Serdash.

The despatch then describes in detail how the situation then stood and the main problems which confronted Sir John and the various actions necessary for their satisfactory solution. Sir John states he considered a combined air and ground operation would attain the main object—which was to restore the Kurdish situation and to re-secure his threatened right flank. In the meantime, he flew to Kirkuk and Arbil to consult the political officers on the spot.

Two columns were formed, known respectively as Koicol, (under the command of Col.-Commandant B. Vincent, C.B., C.M.G.) and Frontiercol (under the command of Col.-Commandant H. T. Dobbin, D.S.O.), the former being directed to move from Mosul to Arbil and thence to Koi Sanjak, and the latter was to concentrate at Arbil after the departure of Koicol, and thence to proceed to and occupy Rowanduz. For the aerial force in this combined operation the R.A.F. Wing at Mosul, consisting of Nos. 1, 30 and 55 Squadrons, was directed to co-operate with the columns until the arrival of Koicol at Koi Sanjak, when co-operation with Koicol would then be taken over by No. 6 Squadron operating from Kirkuk. This squadron in the meantime carried on intensive air action against Shaikh Mahmoud in the Serdash hills.

Saiyid Taha, a prominent figure in this part of Kurdistan, having considerable religious and temporal influence, was dispatched by air to Aqra for the purpose of bringing in the leaders of the tribes in this district and thus making it impossible for Euz Demir to create a diversion through them against the Aqra division. Some 8,000 proclamations, some bearing his seal, were dropped by aircraft, exhorting the tribes not to hinder the advance of the columns or take part in active hostilities. Saiyid Taha justified the confidence placed in him, and thus relieved considerable anxiety with regard to this quarter.

Sir John was in constant touch by R.A.F. wireless outstations with the frontier posts of Levy and Iraq Army Units, and thus felt assured throughout the operations that no hostile activity could develop of which he would not have early and ample warning.

The despatch then proceeds to describe in detail the operations of the columns, during which aircraft figured very prominently. Further on in the despatch Sir John writes as follows:—

"These operations were carried out in difficult hill country over little known routes, of which even the most recent maps are of small value for military operations. Throughout their course I was impressed by the many and particular advantages

which the informed use of air power had given me for conducting this kind of warfare; and I venture to suggest that the experience gained foreshadows important new developments in the conduct of 'small wars.'

It is not too much to say that in a 'small war' no commander has ever before been so closely in touch with his columns, and at the same time with the general situation throughout the country.

Indeed had it not been for this power of rapid inter-communication which I possessed in aircraft and R.A.F. wireless in this country of great distances and crude means of communication, I should have hesitated to undertake this operation at all; while to have timed the out-flanking movement I have described above would have been impossible.

I shall submit a separate report in this connection at an early date, and shall not, therefore, touch in this despatch upon the normal work of air co-operation by reconnaissance, photography and sketching, and by the engagement of ground targets, which was daily carried out; nor upon independent air operations by more than twenty machines which, as occasion required, were carried out against enemy positions. A few instances, however, may be set down here of those uses of aircraft which gave me the particular advantages for conducting this type of warfare to which I have referred above.

On March 12 I was able to examine the situation personally on all sectors of the threatened front, travelling altogether some 550 miles. From my advanced headquarters I was in personal touch with the acting High Commissioner at three hours' notice, and could obtain by dropped and picked-up message a report or appreciation from either column in the same time. On one occasion my presence was required at Baghdad in the afternoon; I left Arbil at 4 p.m. and had returned there next morning by 8 a.m., having travelled over 400 miles.

Landing grounds were selected up to four days' march into the hills over ground impossible for wheels. By means of these, either I or one of my staff was able to discuss events personally with column commanders. Although many days' rain had rendered the ground boggy, I was able to land at Rowanduz two days after the column had entered it.

Where heliograph was almost useless R.A.F. pack sets enabled either column to call my headquarters at any time; and, in addition, kept a regular watch of 6 hours daily when the columns were halted. On one occasion a supply of petrol and charged accumulators was dropped successfully to a pack set.

When the columns were on the march and all other means of communication with them were, therefore, impracticable, messages dropped and picked up by aircraft kept the column commanders in close personal touch both with each other and with myself, and proved in practice the superior even of W/T in rapidity. A mounted air message section was improvised by Koicol.

Air messages from the columns to co-operating aircraft were of unique value in ensuring that special information required in regard to, for instance, dead ground, concealed positions, defiles and so on, was immediately furnished when otherwise considerable delay to the progress of the column and arduous work for the troops would have been occasioned to get it.

At a most important juncture in the operations, when the columns were at Khaniwatman and Benawi respectively, and were preparing their plans for the combined advance to Rowanduz, an appreciation and operation orders were exchanged by air message between the two columns, and I myself received a copy at the same time. This was notwithstanding very adverse weather conditions, and there was, moreover, at the time no other means by which the messages could have been exchanged.

Aircraft picked up in all some 120 messages.

Ration dumps under a strong guard had been established by Officer Commanding Koicol at his march stages. It was of considerable importance for him to know how his hired transport convoys had progressed and the ration state of each post. Aircraft provided the only means by which he could keep in touch with these posts. On one occasion questions were dropped on each post in turn, and replies picked up and dropped to the column commander within two and a half hours.

On one occasion at least the column was enabled to make very rapid marches through very difficult country because closely co-operating aircraft obviated the necessity of piquetting the heights commanding their line of march. This increase in their mobility proved a most important

factor in the success of the operations. Aircraft in a similar way proved effective in checking sniping.

Over 4 tons of barley (a day's ration for the column) were dropped by Vernons in one day. Although the country was in this case particularly unsuitable for such an operation, and little time had been available to make the best preparation, a considerable part of the total successfully reached the column. The wear and tear on boots and socks was prodigious, and during the operations 1,000 pairs boots and 3,000 pairs socks, together with a considerable quantity of similar stores, urgently required, were supplied by air. I am confident that when this method of emergency supply has been more fully investigated and worked out it will prove a valuable asset for a commander to have at his disposal in warfare of this type.

Some 200 dysentery and diarrhoea cases which had developed during the return march were evacuated by Vernons to Baghdad from Girde Tilleh, a point more than 60 miles from Arbil and some 200 miles from Baghdad. These cases must otherwise have had a six days' journey on donkeys, and at least have suffered severely. One Vernon while carrying sick made a forced landing in the most difficult country. A medical officer was skilfully landed at the machine by a Bristol Fighter, which also removed three of the serious cases. The remainder were brought into Koi Sanjak by donkeys whence they were evacuated by air. There must be many occasions in this type of warfare in which evacuation by air is the only possible satisfactory method.

In a later despatch, after the Turkish troops under Euz Demir had been forced to cross the Persian frontier, where they were disarmed, Sir John describes the final operations against Shaikh Mahmoud, who still remained obdurate. Here, again, aircraft played an important part, and, as Sir John states, it was without doubt largely due to those air attacks directed against Shaikh Mahmoud and his forces that he was unable either to perfect his organisation or to raise the tribes for resistance to the column.

Sir John, in this second dispatch, also sets forth a few instances in which aircraft had rendered some of the special services for which they are peculiarly adapted, as follows:—

Aircraft enabled me to visit, on the day previous to that on which the column was timed to attack the Bazian Pass, each sector of the Kurdish front. Kirkuk, Arbil Rowanduz and Mosul, and to return to Kirkuk at dawn to be at hand when the attack on the pass would be in progress.

Independent air attacks on Shaikh Mahmoud, in the initial stages of the march, beyond doubt largely deterred the tribes from rallying to his support.

Throughout the operation the closest touch was maintained

by the column with my headquarters, and with the air forces co-operating, by means of the R.A.F. W/T Mobile Pack Set and the Air Message Section which accompanied the R.A.F. liaison officer.

Air message organisation, freely used, again proved on many occasions its unique value. Several urgent messages were picked up from the column, which, owing to atmospheric conditions, could not at that time have been sent by wireless. On at least two instances aircraft were immediately acquainted in this way with changes in the situation, and modifications made in the original instructions with which they had started out on their patrol.

Air reconnaissances promptly furnished specific information, and reports asked for by the column by picked up messages. Continuous patrols were arranged when the column was traversing a difficult pass. Villages ahead of, and out of reach of, the column known to contain hostile elements were attacked. A delicate W/T transmitter was successfully dropped by parachute.

From experience gained in the Margah district it is clear that aircraft may be of great service in preventing the withdrawal of mounted bands of irregulars from the villages and districts against which the column is marching and in turning back the inhabitants removing their flocks.

It must always be a formidable difficulty in this type of guerilla or tribal warfare that the superior mobility of irregulars on their lightly loaded hill ponies and of tribesmen with their flocks, over the fastest moving column of organised troops enables them to make good their escape, even at the shortest notice, and renders complete surprise almost impossible.

I am of the opinion, however, that it will be found when further experience has been gained of co-operation in this type of warfare that in sending forward low flying aircraft at dawn, into the zone to be visited during the day by the column, to close the roads of escape, much may be done to solve this difficult military problem.

By the evacuation of 47 sick by air out of the hostile area the need was avoided of detaching a considerable post or marching escort from the column for their protection, and an appreciable economy of force effected.

While crossing over a very difficult mountain range the column owing to the nature of the narrow hill track was much lengthened out. Close and continuous air patrols afforded protection to the column throughout the day.

At the end of the supplement are given the names of those who have received rewards for distinguished service in connection with these operations. These will be found in our "Honours" section on p. 392.

## THE ROYAL AIR FORCE AERIAL PAGEANT

AMONGST the many attractions of the fifth R.A.F. Aerial Pageant, which takes place at Hendon on June 28, will be a grand parade of new types of military and naval aircraft which have been developed for home defence and other purposes. These will be flown in public at the Pageant for the first time. During the afternoon the members of the Royal party and other distinguished guests will visit the aircraft park and inspect the new types of aircraft before the fly past.

High-speed single-seater fighter aircraft will be represented, amongst others, by the "Grebe II" (fitted with an air-cooled Siddeley "Jaguar" engine), built by the Gloucestershire Aircraft Company, and by the "Woodcock," equipped with the Bristol "Jupiter" radial engine, and built by the H. G. Hawker Engineering Company. Both these aircraft have high performances, and are two of the latest productions for air fighting purposes. A two-seater land fighter, with a Napier "Lion" engine, will be the Vickers "Venture," while another machine built for similar duties will be the Bristol "Bullfinch," which has an air-cooled "Jupiter" engine.

Bombing aircraft will be represented by the Handley Page "Hyderabad" and the Vickers "Virginia." The first machine has been designed as a medium-range night bomber, and has a speed, with full military load, of over 100 miles an hour. It is a development of the commercial type which is now flying on Continental air routes. The "Virginia" has been produced for long-distance bombing purposes, and, while its speed is not so great as the "Hyderabad," it has other qualities which make it a noteworthy advance on this particular type of aircraft.

The use of aircraft for the speedy transport of sick and wounded was well illustrated in operations which took place in Iraq last year, when more than 200 cases were transported

by aircraft in the course of a few hours, under conditions which would have made it impossible for them to be brought to the base hospital by ordinary means of transport in less than several days. The possibility of using aircraft for such purposes has long been recognised, and two ambulance machines which embody the latest appliances for dealing with medical and surgical cases will be present at the Pageant to illustrate the development of this type. These machines are the Avro "Andover" and the Bristol "Brandon," both of which have useful performances.

Following these large and speedy aircraft will be two tiny light planes, the Parnall "Pixie" and the "D.H.53," which were developed for the Light Plane Competition last year. They are the forerunners of a new type of aircraft which is being further developed.

Interesting, too, will be the Nicuport single-seater fighters which the French squadron will fly at the Pageant, and which will be seen in this country for the first time when they arrive next week. The squadron will be led by Commandant Gastin, who will be accompanied by several famous aces.

A spectacular event in this year's programme is a demonstration by two D.H.9A squadrons of the latest aerial drill. The joint evolutions of these eighteen aircraft in line and in wedge and other formations should be both instructive and attractive.

The gates open at 11 a.m., and flying commences at noon. Special traffic facilities have been arranged in order to cope with an attendance of approximately 100,000 people. Tickets, price 5s. and 10s., can now be purchased through all booking agencies and libraries. There will be a 2s. enclosure, but tickets of admission for this part are obtainable at the aerodrome on the day of the Pageant.



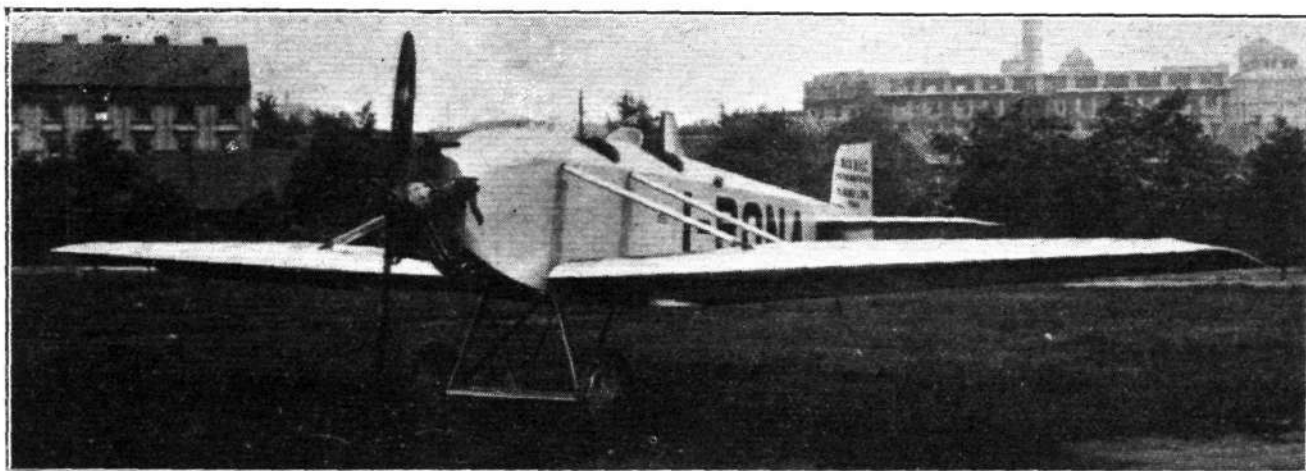
THE  
THIRD

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NATIONAL

# -AERO SHOW AT PRAGUE-

In last week's issue of *FLIGHT* we finished the general descriptions of the machines exhibited at the Prague Aero Show. In this and next week's issue we propose to deal with the detail construction of such machines as appear to merit closer inspection, either because they show forms of construction not usually found in this country, or on account of being the work of firms whose products are not generally known in England. Under the latter category naturally fall all the machines of

11 machines of different type. Everyone was agreed that the workmanship was excellent, and the machines looked very "clean" and efficient. Without in any way wishing to infer that the designers of the "Avia" machines have copied British aeroplanes (in fact, the first "Avia" low-wing monoplanes were produced before any British machines of that type were built), it may be permissible to say that probably the reason why the "Avia" aeroplanes are so pleasing to British eyes



The "Avia" B.H. 12, with 60 h.p. Walter engine, has been specially built for the Brussels competition. Three-quarter front view.

Czech design and construction, as British readers of *FLIGHT* will not, generally speaking, have had the opportunity to become familiar with the work of Czech aeroplane firms.

### THE "AVIA" MACHINES

ALTHOUGH a comparatively young firm, Milos Bondy a Spol had the most imposing exhibit at the Show, as far as actual aeroplanes are concerned, their stand containing no less than

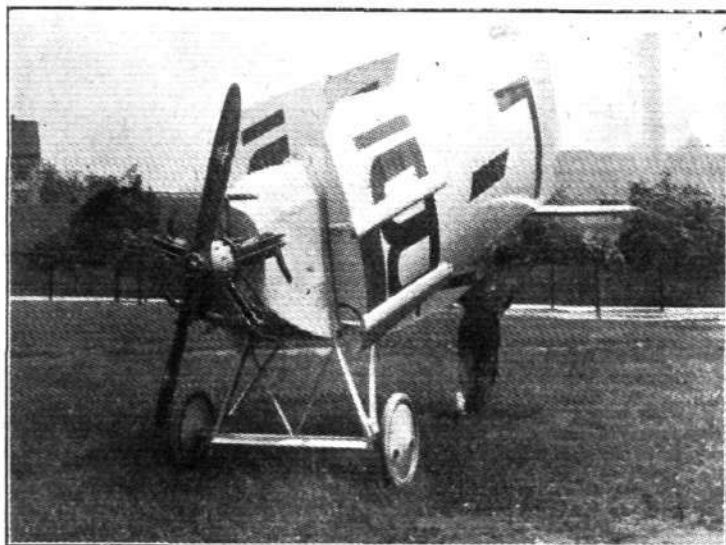
is that their lines follow on British rather than on French and German lines. In the case of the products of the other two Czech aircraft firms, there is a strong family resemblance to German machines, which is totally lacking in the "Avia" machines, be they monoplanes or biplanes, high-wing or low-wing types. The designers of the "Avia" machines are Messrs. Benes and Hainz, hence the "B.H." in the type numbers. The proprietor of the firm is Mr. Milos Bondy, who,



THE "AVIA" B.H. 12. Three-quarter rear view.

like his two designers, is a young man and very enthusiastic. We think it will be admitted that to have produced so many types of machines, not only "on paper" but actually flying and flying extremely well, is a performance of which this firm may well be proud, and the general opinion of visitors to the Prague Exhibition was that the quality of the machines was up to the standards to which we are accustomed in this country, which is merely another way of saying that the machines may be regarded as ranking among the best aeroplanes of whatever nationality.

The firm of Milos Bondy a Spol has not, perhaps, quite



**THE "AVIA" B.H. 12 WITH WINGS FOLDED.**  
The wings pivot around the front spar, and are then secured to the fuselage, when the machine can be trailed behind a car or motor bicycle, or even wheeled along by hand, as show in the photograph.

so strong financial backing or as large factories as some of the other firms, but if enterprise and enthusiasm, coupled with real designing skill, count for anything, this firm should rapidly gain a place among the leading aircraft firms of the world. It may be mentioned incidentally that at the Paris

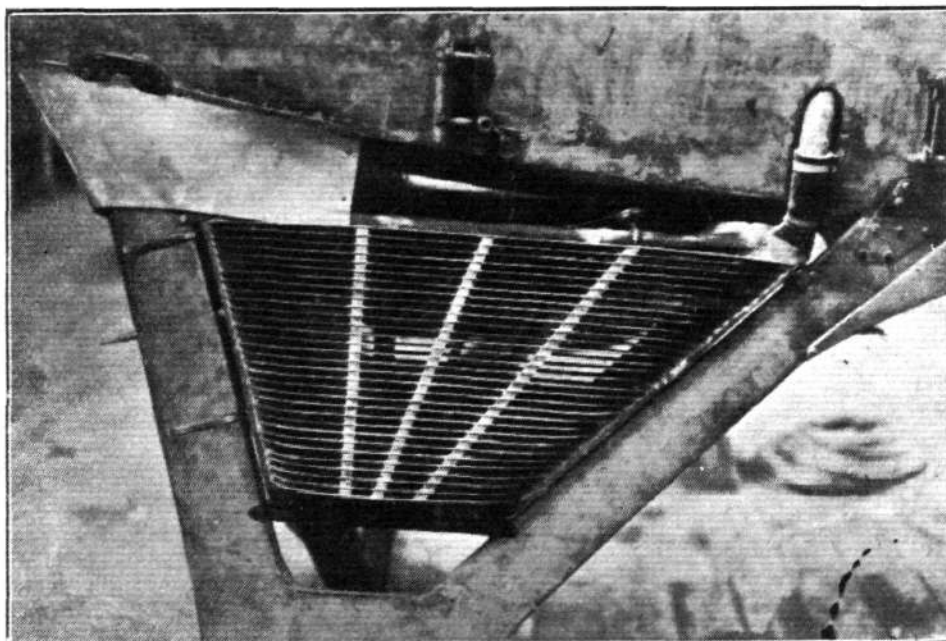
are of the type first made popular in Great Britain by Capt. Geoffrey de Havilland—i.e., a light framework covered with plywood. The wings are two-spar structures, with spars having top and bottom flanges of spruce and sides of three-ply. The ribs are three-ply webs, with divided flanges of spruce tacked through in the manner used by Fokker during the War. The general form of wing construction is indicated in one of our sketches, which has for its main subject the curious turnbuckle bracing of the single inter-plane strut of the type B.H. 17. The strut, it will be seen, is attached to a stout box rib carrying the strut fitting, which latter occurs between the two main spars. At the lower end the turnbuckle runs to the front spar, while at the upper end a similar turnbuckle runs to the rear spar. In a measure this form of strut attachment is similar to that used in the Spad-Herbemont machines, but in these there are two turnbuckles at each end, to front and rear spars respectively. We are not sure that we altogether like the B.H. 17 arrangement of strut attachment, but both on calculation and actual loading tests it is stated to have shown a very high factor of safety.

The manner of attaching the tail surfaces on several "Avia" machines is illustrated by a sketch. The fuselage terminates in a forked cut-out portion, into the inner end of which the small fixed tail plane is permanently fitted. The balanced elevator has a single crank, which is centrally placed and works in the fork in the stern of the fuselage, as indicated in the sketch.

Milos Bondy a Spol, it should be pointed out, manufacture the whole of their machines with the exception of instruments and tyres. They have developed a special form of aluminium welding, which is employed in their petrol and oil tanks. They also make their own radiators for such of their types as are fitted with water-cooled engines. Two of these radiators are shown in our illustrations. One of these is of the ordinary flat type, mounted under the fuselage in such a way as to be capable of being raised or lowered to vary the cooling. The other radiator is shown in a photograph. This type is mounted in the angle between the chassis struts, and is similar in a general way to the later type Lamblin, although of different shape. Shutters are provided for varying the cooling, but in the photograph they are not in place, although their supports on the front strut may be seen.

Incidentally it may be mentioned that possibly there may be an opportunity for FLIGHT readers residing in or near London to see an "Avia" machine, as there is a possibility that the machine which is taking part in the Brussels competitions may be flown over to Croydon for a short visit. This is the type B.H. 12, which is shown in three of the accom-

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♦  
♦  
♦ One of the chassis-strut  
♦ radiators of the "Avia"  
♦ B.H. 17. These radia-  
♦ tors are manufactured  
♦ by the "Avia" com-  
♦ pany. Shutters for  
♦ varying the cooling  
♦ are mounted on the front  
♦ struts, but are not in  
♦ place in the photo-  
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Aero Show, which is to be held this autumn, Milos Bondy a Spol will be well represented, and at least one of their types is, we understand, to be manufactured in France under licence, so that already the work of this firm is being appreciated also outside Czechoslovakia.

Simplicity is the keynote of Benes and Hainz design, and up to the present these designers have shown their preference for wood construction by employing this material almost exclusively except for a few wing fittings, etc. Their fuselages

panying photographs. Generally similar to the B.H. 9, from which it has been developed, the B.H. 12 has a more refined structure, with the result that a considerable saving in structure weight has been effected. The machine is fitted with a 60 h.p. Walter radial air-cooled engine.

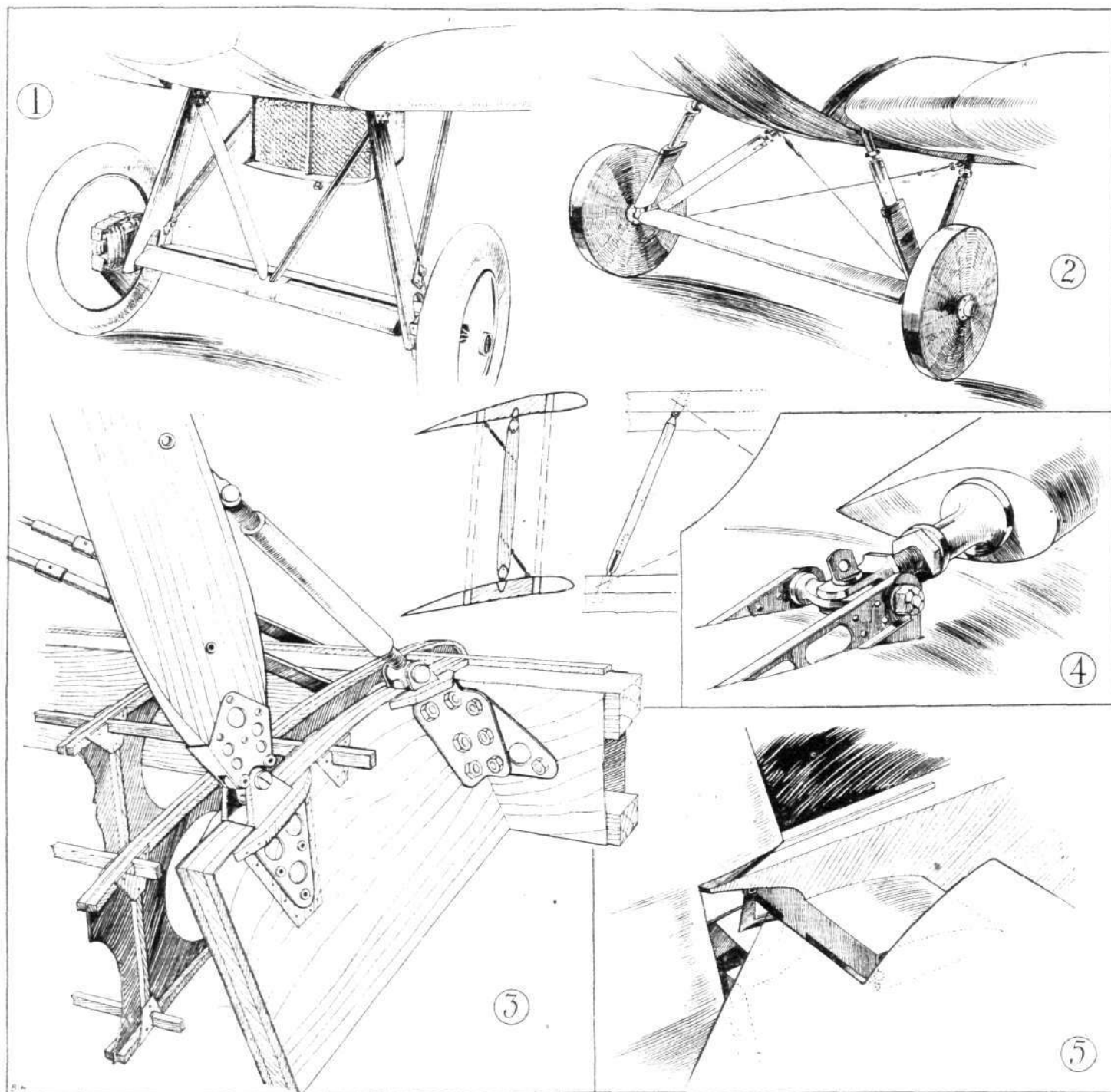
The B.H. 16 light plane is also illustrated this week. It is generally similar to the other B.H. low-wing monoplanes, but is, of course, of lighter construction. The engine fitted on the exhibition machine was a Vaslin, but when it can be



obtained it is intended to fit one of the Blackburne "Tomtit" engines, which will be mounted in an inverted position as in the D.H. 53 and A.N.E.C. monoplanes. This machine has a very neat and simple undercarriage, in which the front legs are fitted with rubber shock absorbers in the form of rubber blocks working in compression. One of our sketches shows this undercarriage.

number of beautifully-finished scale models were shown, covering the complete range of machines designed by the firm's chief designer, Mr. Smolik.

Of the two machines exhibited the more interesting was undoubtedly the S.8, a racing monoplane with Napier "Lion" engine. This machine has a metal fuselage composed of welded steel tubes and wire bracing, with longitudinal



**SOME CONSTRUCTIONAL DETAILS OF "AVIA" MACHINES:** Fig. 1 shows undercarriage and retractable radiator of the "Avia" B.H. 19. This machine is a low-wing single-seater monoplane fighter with 300 h.p. Hispano-Suiza engine. (2) Undercarriage of the B.H. 16 light 'plane. The springing is provided by rubber blocks in compression. (3) Details of wing construction of the B.H. 17 biplane. The single interplane strut is braced by large turnbuckles at top and bottom, as indicated in the diagrams. Spars and ribs are of similar construction to that used in other "Avia" machines. Fig. 4 shows a typical "Avia" strut fitting. The sketch was actually made from the type B.H. 12. In 5 is shown the manner of mounting the balanced elevator and rudder on most of the "Avia" machines. The small fixed tail plane is rigidly built into the tail portion of the fuselage.

#### THE MILITARY AIRCRAFT FACTORY MACHINES.

The Military Aircraft Factory, or Vojenska Tovarna na Letadla, was not, as already stated in *FLIGHT*, able to exhibit more than two complete machines, although the firm has produced, or has in production, a long series of types. In order to give visitors to the Prague Aero Show some idea of the types under construction or contemplated, a large

stringers added to give the external polygonal section. The details of the construction, although sketched from the fuselage of another machine, may be approximately realised from the sketch, as the general form of construction is very similar in the two types. In the monoplane, of course, the stringers and fairing extend over the sides as well as over the top and bottom. The form of construction is very reminiscent of



The "Avia" B.H. 16 is a light 'plane single-seater, and will be fitted with a Blackburne engine. The engine shown in this photograph is a Vaslin.

German practice, and will scarcely appeal to British aircraft designers, especially the use of welding for the joints between longerons and struts.

The wings of the S.8 are of wood construction, and are fabric covered. A single strut on each side, running to the lower end of the undercarriage leg, provides the wing bracing. The monoplane wing is chiefly remarkable for the bi-convex section used, which probably has a very good L/D ratio at very small values of the lift coefficient—i.e., at very high speeds.

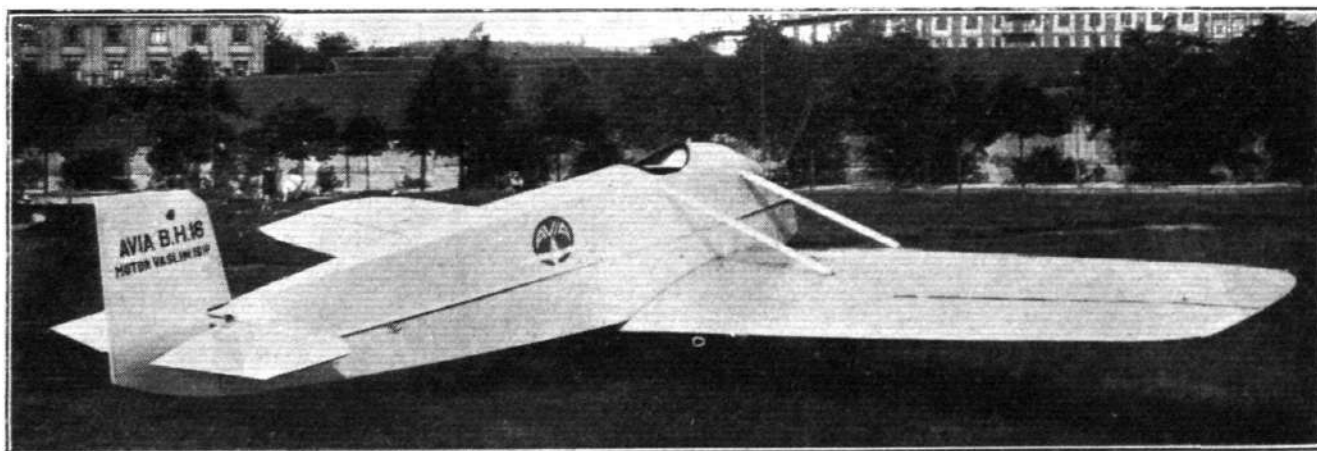
On the other hand, it is to be expected that the  $k_L$  maximum is relatively small, so that probably the landing speed is extremely high, especially as the wing loading is in the neighbourhood of  $15\frac{1}{2}$  lb./sq. ft. That the machine is fast cannot be doubted, and probably the estimated speed of 360 km./h. (225 m.p.h.) will be realised in practice, especially as the engine fitted is a high-compression Napier "Lion."

The undercarriage consists of two legs of N formation, the sides of which are totally covered in, as shown in one of our

The other complete machine exhibited by the Military Aircraft Works was the S.6, a two-seater fighter and reconnaissance biplane. In general lines this machine is of typical German appearance, and the construction is the same welded steel tube fuselage structure which appears to have been adopted by Mr. Smolik. As already stated, it does not appeal to British engineers at all, and aerodynamically the machine is of antiquated design.

We are naturally not in a position to know how far some of the schemes indicated by the scale models exhibited are maturing, and in the case of one at any rate, the S.137, with 7 (seven) engines, it seems very doubtful whether such a machine is even an engineering possibility. Certainly it does not appear to be a practical commercial proposition, and we understand that as a matter of fact the project has been dropped.

Of the remaining Smolik models it will suffice to refer to two, photographs of which we are publishing herewith. One of these is a three-engined commercial monoplane, with a



The "Avia" B.H. 16 light 'plane. Three-quarter rear view.

sketches. The rubber shock-absorbers are enclosed in a streamline casing so as to reduce head resistance. The photograph of the S.8 published on p. 362 of our issue of June 5 showed the machine in its original form, with circular nose radiator and open undercarriage legs. As exhibited the machine had the legs enclosed, and the nose radiator had been replaced by a Lamblin under the fuselage. Even this does not represent the final form, as we understand that it is intended to fit two of the new type Lamblin radiators on the undercarriage struts. The Napier "Lion" is neatly cowed in, only the exhaust pipes projecting, and the machine appears to have been about as completely streamlined as is possible. One somewhat remarkable feature of the design is the very small tail fitted. Whether or not this will prove sufficient to prevent spinning seems rather doubtful, and a larger tail would in any case be an advantage, even if the one fitted is not actually dangerously small.

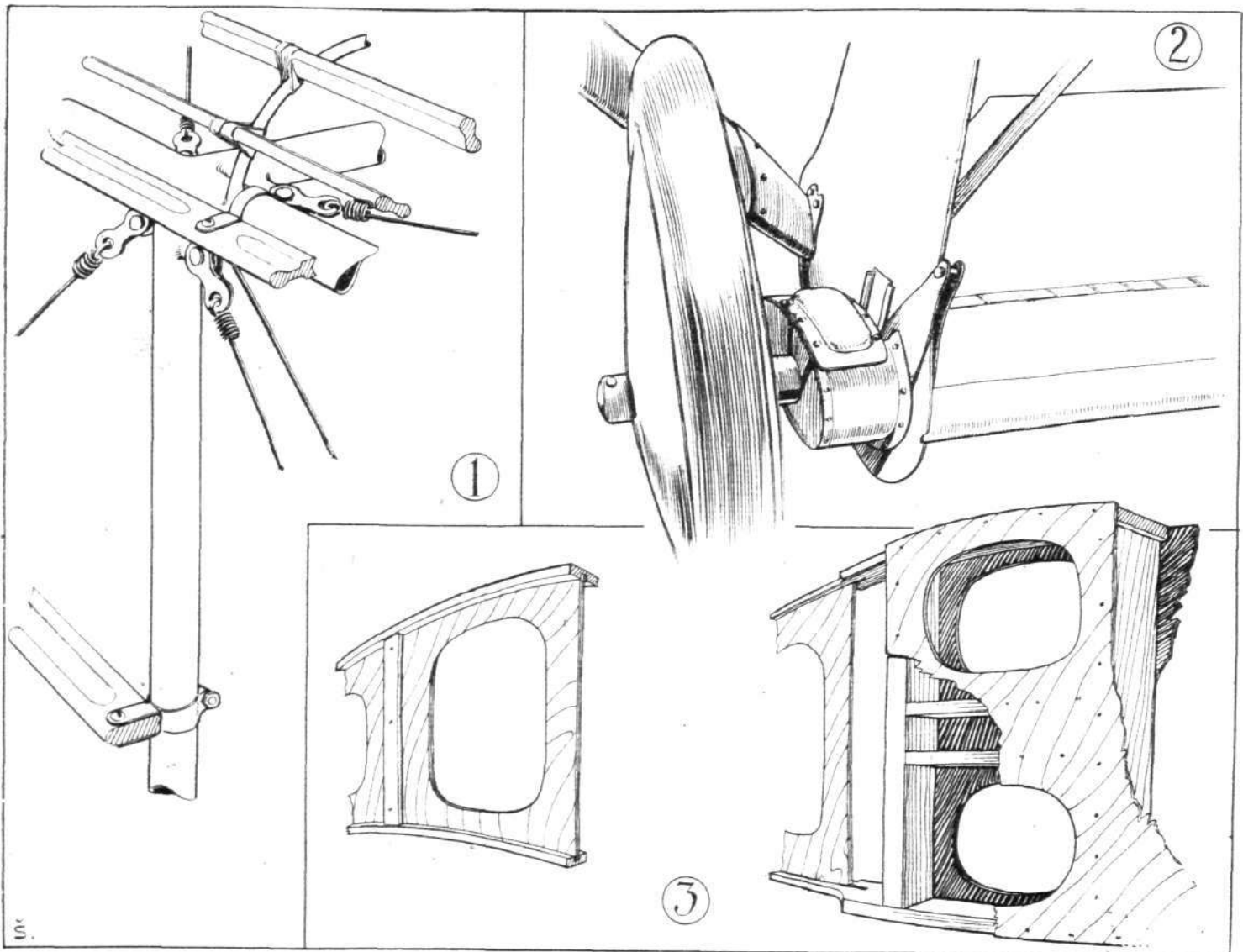
Napier "Lion" placed in the nose of the fuselage and two 220 h.p. B.M.W. engines in narrow nacelles under the wing.

The engine nacelles also carry the four wheels of the undercarriage, as shown in the photograph. This machine, which carries the series number S.9, is stated to be in course of construction at the Prague works of the Vojenska Tovarna na Letadla, and will, it is stated, have accommodation for 30 passengers.

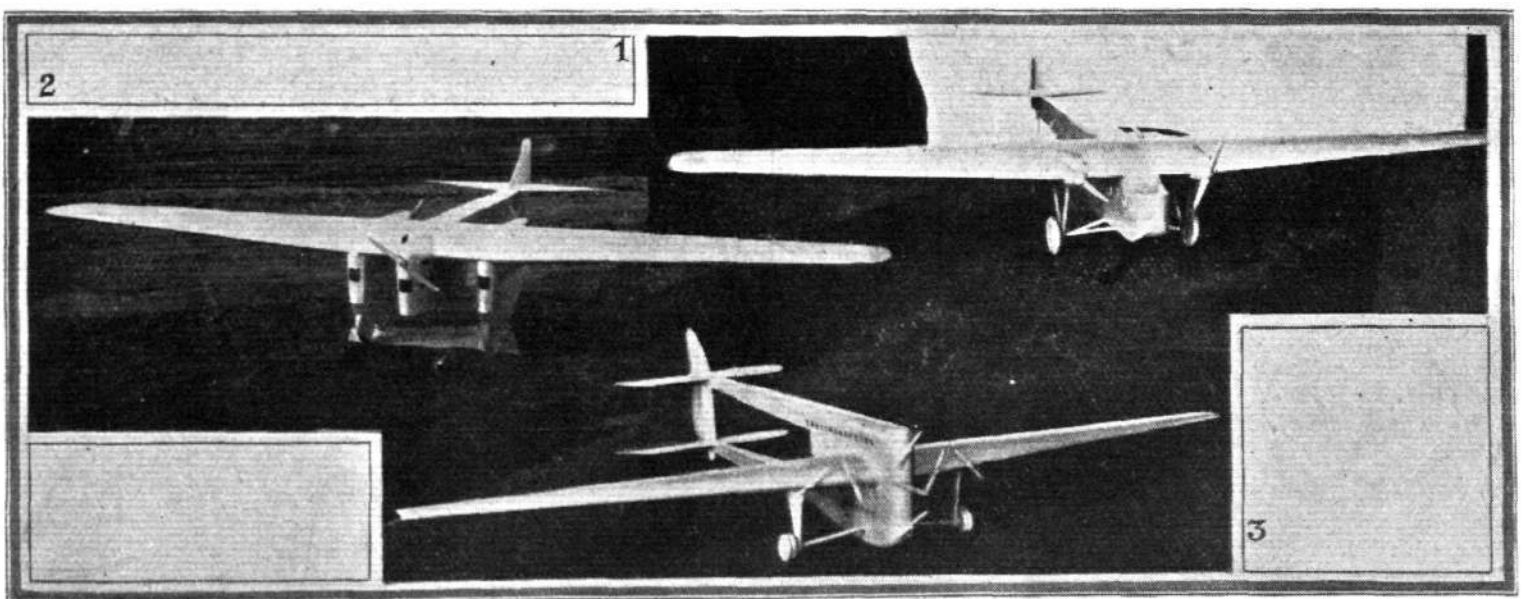
Finally there is the four-engined monoplane, the S.15, which also is said to be in course of construction. This machine is intended for night flying, and will be fitted with four Hispano-Suiza engines mounted in the wing, two in tandem on each side.

Judging from the models exhibited, it will be seen that Mr. Smolik and his firm are not without ambition, and in this connection it is of interest to point out that the Military Air-





**SOME SMOLIK DETAILS:** Metal construction is largely employed by the Czech Military Aircraft Factory, a typical example of fuselage construction being shown in 1. 2 shows the undercarriage of the S.8, a monoplane racer with Napier "Lion" engine. Lamblin radiators, of the new strut type, are to be fitted on the chassis legs. In 3 are shown examples of wood wing construction.



**CZECHO-SLOVAK CONCEPTION OF COMMERCIAL AEROPLANES:** These three scale models represent designs either actually in course of construction or contemplated by the Military Aircraft Factory, to the designs of Ingenieur Smolik. 1 shows the "S.15," with four Hispano-Suiza engines placed in tandem in the wings. The propeller efficiency of the pusher screws aft of such a deep wing seems a somewhat doubtful quantity. In 2 is shown the model of a three-engined machine, in which the tractor engine in the fuselage is a Napier "Lion," while the two pushers are B.M.W. engines of 220 h.p. each. 3 shows a seven-engined design, but this has, we believe, been abandoned as being too ambitious.

craft Factory is being reorganised. In future it will be a curious mixture of a government establishment financed partly by private capital, an arrangement that would seem to confer to some extent a monopoly on the firm, and with which the other Czech aircraft firms can hardly be over-pleased.

**"Aero" Tovarna Letadel, Prague.**

THE five machines exhibited by this firm were all of very normal design and construction, if by normal one understands normal German practice. The "Aero" firm commenced operations some years ago by obtaining the services

played in the fuselage, and altogether the machine resembles in shape and construction German aeroplanes of the War period.

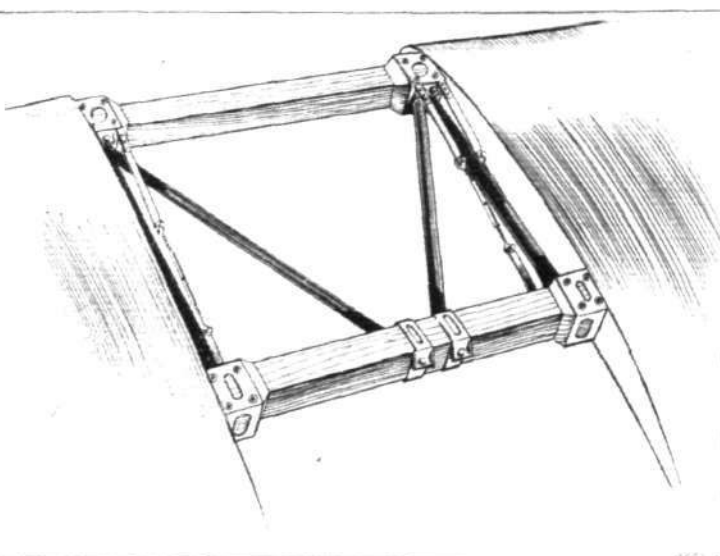
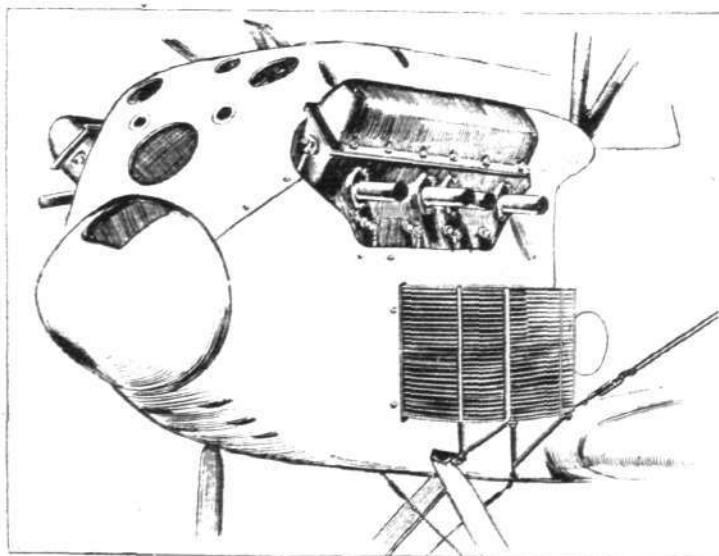
Of more modern type was the little "Ae. 20," a single-seater fighter with 300 h.p. Hispano-Suiza engine. Constructionally this machine is very similar to other "Aero" types, but the design is more in line with modern ideas. As the accompanying sketch will show, the "Hisso" is neatly cowled in, and side radiators of the crescent-shaped type developed by the "Aero" firm are fitted. These radiators,



**TWO OF THE "AERO" MACHINES AT THE PRAGUE EXHIBITION:** The machine on the left is the twin-engined bomber, "Ae.24." On the right the "Ae.18."

of a Gotha designer, and since then do not appear to have been able to get away from Gotha influence in design, although the present chief designer, Mr. Husnik, is a Czech. Of the five machines exhibited two were of similar type, the "Ae. 18" and the "Ae 16," the latter being of slightly smaller span. The type was exhibited at Gothenburg last year, but was then fitted with a 185 h.p. B.M.W. engine, whereas this year the power plant is a 220 h.p. Walter. The "Ae. 12" is a two-seater fighter and reconnaissance biplane with 260 h.p. Maybach engine. Welded steel tube construction is em-

ployed in the fuselage, and altogether the machine resembles in shape and construction German aeroplanes of the War period. by the way, are provided with a rather unusual shutter for varying the cooling, and are fitted on all "Aero" machines. The radiators are of the flat segment type, and the shutter takes the form of a metal "comb" whose teeth are covered with felt so as to obtain a reasonably airtight fit between the radiator segments. This "comb" is hinged in the centre of the forward corner of the radiator, and varies the cooling by allowing more or less air to pass in between the segments. When the "comb" is lying parallel with the line of flight obviously the cooling is at a maximum, while



**SOME "AERO" CONSTRUCTIONAL DETAILS:** On the left, the engine cowling of the "Ae.20." The engine is a 300 h.p. Hispano-Suiza. The radiator is a special "Aero" type, and incorporates a "comb" between the segments for varying the cooling. On the right, the open centre-section of the lower plane of the "Ae.18." The wing is in one piece, and rests in a cut-out in the bottom of the fuselage, being secured by four bolts at each corner of the panel.

a minimum is attained when the "comb" is at right angles to the fuselage. The arrangement is rather neat, and has been found to work well in practice. It has not been possible to make a sketch of the arrangement, as the "comb" is hidden between the segments, but the general shape of the side radiator is shown in the sketch, and the shutter arrangement will easily be understood.

## R.A.F. SPORTS

THE Annual Athletic Championships of the R.A.F. were held on the 11th, 12th, and 14th inst. at Uxbridge, when the various events were contested by over 700 competitors representing 28 R.A.F. stations—200 more competitors than last year. The events comprised the following:—

### Individual Events

100 Yards, 220 Yards, 440 Yards, 880 Yards, One Mile, Three Miles, 120 Yards Hurdles, High Jump, Long Jump, Putting the Weight (16 lb.), Two Miles Walk, 440 Yards Hurdles, Throwing the Javelin, and Pole Jump.

### Team Events

*For Cup Presented by His Majesty.*—440 Yards Relay, One Mile Relay, Two Miles Relay, One Mile, 360 Yards Hurdles Relay, High Jump, Long Jump and Tug-of-War.

*For Cup Presented by the Air Council.*—440 Yards Relay, One Mile Relay, Two Miles Relay, One Mile, 360 Yards Hurdles Relay, High Jump, Long Jump, and Tug-of-War.

On the 11th the "Individual" events were decided, and the preliminary heats of four of the "Team" events (Putting the Shot, Throwing the Javelin, Long Jump and High Jump) were run. The results of the "Individual" events were:—

*Two Miles Walk.*—A.-C. Worrall (Uxbridge) (holder), 15 mins. 17 secs., 1; A.A. Golightly (Halton), 15 mins. 59 secs., 2; A. C. Scott (Shotwick), 3.

*100 Yards Race.*—Sgt.-Maj. Mawby (Cranwell), 1; Cpl. Arthur (Duxford), 2; L. A. C. Goodman (Eastchurch), 3; A. C. Moffat (South Farnborough), 4. Won by a foot. Time, 10 1-5 secs.

*Half-Mile Race.*—A.-C. Oxley (Ruislip), 1; A.-C. Morgan (Manston), 2; A.-C. Liddle (Henlow), 3; H. Dunn (Calshot), 4. Won by two yards. Time, 2 mins. 5 2-5 secs.

*220 Yards Race.*—Sgt.-Major Mawby, 1; Cpl. Arthur, 2; A.-C. Caffin (Kenley), 3. Won by eight yards. Time, 23 2-5 secs.

*One-Mile Race.*—A.-C. Turner (Uxbridge), 1; Cpl. O. C. Clarke (Halton), 2; A.-C. Morgan (Halton) (holder), 3. Won by two yards. Time, 4 mins. 36 4-5 secs.

*Quarter-Mile Race.*—Cpl. Hodgson (Uxbridge), 1; F.-O. Howlett (Gosport), 2; A.-C. Freeman (Manston), 3. Won by six yards. Time, 54 3-5 secs.

*Three Miles Race.*—A.-C. Johnson (Manston), 1; A.-C. Turner (Uxbridge), 2; L.A.C. Caines (Manston), 3. Won by 12 yards. Time, 15 mins. 41 secs.

*120 Yards Hurdles.*—F.-O. Hadley (Spittlegate), 1; F.L. Walmsley (Cranwell), 2; Sgt. Mackay (Cranwell), 3. Time, 17 secs. In the Two Miles Walk Worrall (the holder) beat his own previous record of 15 mins. 45 1-5 secs.

The following day some more of the heats for the Team events were run off, and also the 440 yards hurdles, which resulted as follows:—Serg. Lowdell (Duxford), 1; A.-C. Tame (Calshot), 2; L.A.C. Fuller (Cranwell), 3. Won by five yards. Time, 59 4-5 secs.

On Saturday, the 14th, the Team events were concluded, the results being:—

*Quarter-Mile Junior Relay Race.*—South Farnborough 1; Gosport, 2; Calshot, 3. Won by a yard. Time, 48 4-5 secs.

The remaining machine exhibited on the "Aero" stand was a twin-engined night bomber, showing the usual welded steel tube fuselage construction. The only unusual feature of this machine was the jointed fuselage, the rear portion being so attached to the front as to be readily detachable. This feature was indicated in the silhouette of the "Ae. 24" published at the bottom of p. 357 of our June 5 issue.

*Quarter-Mile Open Relay.*—Cranwell (Sgt.-Maj. Mawby, A.-C. Grant, A.-C. Vernon, and A.-C. Griggs) (holders), 1; Duxford (P.-O. Gray, Fl.-Off. Johnson, P.-O. Crauswick, and Cpl. Arthur), 2; Uxbridge (Cpl. Hammond, Flt.-Sgt. Bradbury, L.-A.-C. Nicholls, and Cpl. Hodgson), 3. Won easily. Time, 46 4-5 secs.

*Tug-of-War* (88 st.).—Gosport beat Felixtowe by two pulls to none.

*Pole Vault.*—Flt.-Sgt. Bradbury (Uxbridge), 8 ft. 2 ins., 1; A.-C. Warner (Cranwell), 8 ft., 2.

*Putting the Shot.*—Fl.-Off. Harcourt-Vernon (Andover), 34 ft. 1 in., 1; Wing-Comdr. Patterson (Cranwell), 2; Flt.-Lt. Boyce (Gosport), 3.

*Tug-of-War (Open).*—Cranwell (holders) beat Manston by two pulls to none.

*One-Mile Junior Team Race.*—Calshot (A.-C. Dunne, A.-C. Wright, A.-C. Jarrett), 6 points, 1; South Farnborough and Ruislip, each 45 points, 2; Shrewsbury, 4; Gosport, 5; Upavon and Martlesham, 6. Time, 4 mins. 45 secs.

*One-Mile Open Team Race.*—Uxbridge (A.-C. Turner, L.A.-C. Goodall, A.-C. Sanderson), 16 points, 1; Manston and Halton, 20 points each, 2; Henlow, 37 points, 4; Cranwell, 44 points, 5; Duxford, 59 points, 6. Time, 4 mins. 31 2-5 secs.

*High Jump.*—P.-O. Nuttall, South Farnborough, 5 ft. 11 ins., 1; F.-O. Burns, Leuchars, 2; L.-A.-C. Dearsley, Kenley, 3.

*Throwing the Javelin.*—F.-O. Harcourt-Vernon, Andover, 174 ft. 7 ins., 1; Cpl. Eyles, Uxbridge, 2; Sgt. Fretwell, Spittlegate, 3.

*Two-Miles Open Relay.*—Manston (A.-C. Johnson, L.-A.-C. Cains, A.-C. Taylor, and A.-C. Morgan), 1; Uxbridge, 2; Halton, 3. Won by three yards. Time 8 mins. 44 2-5 secs.

*Two-Miles Junior Relay.*—Calshot (A.-C. Wright, A.-C. Jarrett, Cpl. Topping, and A.-C. Dunne), 1; Gosport, 2; Shrewsbury, 3. Won by seven yards, in 8 mins. 56 secs.

*350 Yards Junior Hurdles Relay.*—Spittlegate, 1; Gosport, 2; Ruislip and Shotwick, 3. Time, 55 secs.

*350 Yards Senior Hurdles Relay.*—Cranwell (L.-A.-C. Fuller, Sgt. McKay, and Flt.-Lt. Walmsley), 1; Flower Down, 2; Manston, 3. Won by eight yards, in 57 2-5 secs.

*One-Mile Junior Relay.*—Shrewsbury (A.-C. Ousley, A.-C. Warrell, L.-A.-C. Olney, and A.-C. Inwards), 1; Gosport, 2; Ruislip, 3. Won by four yards. Time, 3 mins. 41 3-5 secs.

*One-Mile Open Relay.*—Cranwell (A.-C. Griggs, L.-A.-C. Fuller, A.-C. Reynolds, and Sgt.-Maj. Mawby), 1; Halton, 2; Manston, 3. Won by ten yards. Time, 3 mins. 37 4-5 secs.

*Long Jump.*—F.-O. Hadley, Spittlegate, 22 ft. 1 in., 1; F.-O. Nuttall, South Farnborough, 2; Sgt. Amos, Manston, 3.

*High Jump (Team Championship) (Aggregate of Three).*—Halton, 15 ft. 7 ins., 1; Duxford, 15 ft. 1 in., 2.

*Long Jump (Team Championship) (Aggregate of Three).*—Manston, 59 ft. 11 ins., 1; Cranwell, 57 ft., 2.

The day's proceedings commenced with a grand march past of the competitors, led by Flying Officer A. J. Adams, Secretary of the R.A.F. Athletic Association. The salute was taken by Brig.-Gen. the Right Hon. Lord Thomson, Secretary of State for Air, who also distributed the prizes. The King's Cup was won by Cranwell, with a score of 38 points out of 50.

### The Prince of Wales at Supermarine Works

DURING his visit to Southampton on June 27 H.R.H. the Prince of Wales will make a brief inspection of the Supermarine Aviation Works at Woolston.

### The Royal Aero Club and the R.A.F.

THE Editor's horrible handwriting was responsible last week for a small but important slip. In referring to the admission by the Royal Aero Club of officers of the Royal Air Force, etc., to full membership of the R.Ae.C., it was stated that such admission was granted without entrance fee at the "normal" annual subscription of two guineas. This was, of course, incorrect, and should have read "nominal", as the normal annual subscription is considerably more than the nominal fee of two guineas. Thus the paragraph rather

failed to bring into prominence the extremely favourable terms offered by the Royal Aero Club to officers of the R.A.F., R.A.F. Reserve, and Air Ministry departments.

### Gordon Bennett Balloon Race

SEVENTEEN balloons, representing eight nations, started from Solbosch Plain, Brussels, on Sunday, June 15, for the Gordon Bennett Cup. Although, at the time of writing, several of the competitors have landed, complete details as to the landings, distances, etc., of all the competitors are not yet available, so we will be unable to give these this week.

### Seaplane Height Record

ON Saturday, June 14, Adjutant Burri beat the world's height record for seaplanes with 1,000 kgs. load, by attaining an altitude of 4,000 m. (13,120 ft.) in 1 hr. 5 mins.



## PROGRESS IN THE BIG FLIGHTS ROUND-THE-WORLD FLIGHTS

BUT little progress has been made in the flights round the world during the past week. Squadron-Leader MacLaren of the British expedition being still held up at Akyab, while the American team, under Lieut. Smith, have met with considerable delay, first on account of violent storms, and then owing to a mishap.

On Thursday last Squadron-Leader MacLaren's new Vickers amphibian flying boat arrived at Akyab on the U.S. destroyer *William B. Preston*, and work was immediately started on preparing the machine for flight. All being well, Squadron-Leader MacLaren hopes to resume the flight this week-end.

Having completed the overhauling and repairs to the Douglas "World Cruisers," Lieuts. Smith, Wade and Nelson left Hong-Kong early on Tuesday morning, June 10, and arrived in the afternoon at Hai-Phong. A somewhat difficult section of the route now faced the American flyers, and U.S. destroyers proceeded to points midway between Hai-Phong and Tourane, and Saigon and Bangkok, and also to the Bay of Bengal, in order to render assistance should it be required. Reports are somewhat obscure as to the actual happenings after the departure from Hong-Kong, but it appears that on resuming the flight from Hai-Phong on June 11 Lieut. Smith was forced to land at Hué, near Tourane, in French Indo-China, and damaged his engine. The two other machines, apparently, landed at Tourane. A new "Liberty" engine was immediately despatched by destroyer from Saigon.

Owing to the violence of the storms at present experienced in this part of the country, the over-land portion of the route across south Indo-China originally planned has been abandoned, and the flyers will probably follow the coast line of the Gulf of Siam to Bangkok.

At the time of writing the latest news received is to the effect that the American flyers left Tourane on June 16, and arrived at Saigon in the afternoon.

The American team, of four Douglas biplanes (400 h.p. "Liberty"), consists of Major F. L. Martin, Lieuts. L. H. Smith, L. Wade and E. H. Nelson, and mechanics. They started from Santa Monica on March 25. Major Martin, though still officially leader, is at present out of the flight.

The British flight is made up of Squadron-Leader A. S. C. MacLaren, Flying Officer J. Plenderleith and Sgt. Andrews, on a Vickers (Napier "Lion") amphibian flying boat.

Respective mileage (approximate) completed to date: *American*, 10,248 miles; *British*, 6,750 miles.

### Lisbon-Macao Flight

VERY little news of the Portuguese flight from Lisbon to Macao has been forthcoming during the past week. We left them last week at Bangkok with a nasty portion of the route before them. It is reported that they intend omitting Saigon from their final section, and will make a dash across Siam, etc., in a north-easterly direction, to Thakhek, thence to Vinh and Hai-Phong. We have not, up to the time of writing, heard if they have left Bangkok yet.



### Afternoon Letter Air Mail to Holland, etc.

THE Postmaster-General announces that from Monday last, June 16, an additional letter air mail to Holland by afternoon aeroplane from Croydon was instituted.

The air mail will be closed at the counter of the General Post Office, London, at 1.35 p.m. each week-day, and will offer (a) delivery of letters, even without prepayment of an express fee, in Rotterdam and Amsterdam the same evening; (b) by connecting with night mail trains from Amsterdam, accelerated delivery next day at all places in Holland and at Hamburg, Berlin and many other places in Germany; and (c) also by night mail connections from Amsterdam, accelerated transmission to certain countries east and south-east of Germany, viz.: Poland, Czecho-Slovakia, Austria and Hungary.

Registered correspondence for Germany and places beyond will not be admissible. The special fee payable, in addition to ordinary foreign postage, will be, on letters for Holland, 2d. per oz., and on letters for Germany and beyond, 3d. per oz.

The latest times for posting at offices other than the General Post Office will be (at the counter) 1.20 p.m. at Threadneedle Street and Lombard Street Branch Offices, 1.10 p.m. at Fenchurch Street Branch Office, 10.30 a.m. (in the public posting box) at Paddington District Office, and 11.0 a.m. at the remaining district offices. Further particulars will be given in a new edition of the air mail leaflet about to be issued.

## IMPORTS AND EXPORTS, 1923-1924.

AEROPLANES, airships, balloons and parts thereof (not shown separately before 1910). For 1910 and 1911 figures see "FLIGHT" for January 25, 1912; for 1912 and 1913, see "FLIGHT" for January 17, 1914; for 1914, see "FLIGHT" for January 15, 1915; for 1915, see "FLIGHT" for January 13, 1916; for 1916, see "FLIGHT" for January 11, 1917; for 1917, see "FLIGHT" for January 24, 1918; for 1918, see "FLIGHT" for January 16, 1919; for 1919, see "FLIGHT" for January 22, 1920; for 1920, see "FLIGHT" for January 13, 1921; for 1921, see "FLIGHT" for January 19, 1922; for 1922 see "FLIGHT" for January 18, 1923; and for 1923, see "FLIGHT" for January 17, 1924.

	Imports.		Exports.		Re-Exports.	
	1923.	1924.	1923.	1924.	1923.	1924.
Jan. ..	466	2,213	60,079	52,239	280	2,219
Feb. ..	641	920	120,236	26,349	3,040	335
Mar. ..	589	11,381	71,945	34,113	689	509
Apr. ..	8,508	373	167,757	56,998	462	6,014
May ..	845	3,426	55,427	125,138	728	4,162
	11,049	18,313	475,444	294,837	5,199	13,239

## PUBLICATIONS RECEIVED

*The London Mercury*. Edited by J. C. Squire. Vol. X, No. 55. May, 1924. The London Mercury, Castle Court, Poppin's Court, E.C. 4. Price 3s. net.

*Anglo-Persian Oil Co., Ltd., Wembley, 1924.* The British Petroleum Co., Ltd., Britannic House, Moorgate, London, E.C. 3.

*Revue Juridique Internationale de la Locomotion Aérienne*. May, 1924. Edition Aérienne, 4, Rue Tronchet, Paris.

*Advisory Committee on Atmospheric Pollution. Report on Observations in the Year ending March 31, 1923.* Meteorological Office, Air Ministry. M.O. 260. London: H.M. Stationery Office, Kingsway, W.C. Price 4s. 6d. net.

*Report on the Commercial and Industrial Situation in Hungary, dated February, 1924.* By R. J. E. Humphreys. Department of Overseas Trade. London: H.M. Stationery Office, Kingsway, W.C. 2. Price 1s. 6d. net.

*Department of Overseas Trade. Report on the Economic, Commercial and Industrial Section of Sweden, March, 1924.* By H. Kershaw. London: H.M. Stationery Office, Kingsway, W.C. 2. Price 1s. 6d. net.

*The Official Gazette of the United States Patent Office*. May 20, 1924. U.S. Patent Office, Washington, D.C., U.S.A.

*Militärwissenschaftliche und Technische Mitteilungen*. May-June, 1924. Schriftleitung und Verlag, Stubenring 1, Vienna.

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*Cartes, Guides et Publications Aéronautiques, Scientifiques, Techniques, Touristiques*. Ed. Blondel la Rougery, 7, Rue Saint-Lazare, Paris (IX).



## AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; I.C. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

### APPLIED FOR IN 1923

Published June 19, 1924

382. R. E. CLOUGH and A. P. GRIBBIN. Screw propellers. (216,170.)  
4,829. GAS ACCUMULATOR CO., LTD., A. G. WATSON and G. GOODWIN. Rotary light signal apparatus. (216,189.)  
5,373. F. L. M. BOOTHBY. Protection of airships against fire. (216,215.)  
5,662. H. O. SHORT. Aeroplane flying-machines or hydro-aeroplanes. (216,227.)  
31,728. S. HEATH. Variable-pitch propellers. (215,795.)

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